tongue shows a coarse tremor which extends to the lips. The speech is hesitating and in a lengthy conversation becomes jerky in character. The usual paradigmata can be repeated, but there is noticeable an omission of syllables and inability to pronounce the "r's."

His arithmetic is exceedingly faulty: Examples: $9 \times 9 = 72$, $100 - 21 = 78$, etc. Memory tests show defects which are not very pronounced. There is complete orientation as to time, place and persons.

GLIOMA OF THE BRAIN

By Julius Grinker, M.D.

The patient 52 years old, a financial secretary of a union, was always capable of fulfilling the official duties which required a good memory; the members would pay him dues, he would give them a receipt for same, and then had to enter their names on the books. Often he would accept money on the street or wherever he happened to be and yet he seldom made a mistake. In other words, until about two months prior to his death, he was mentally sound. He attended his usual work. About two months prior to his last illness he sustained a scalp wound over the left occipital bone, caused by the fall of a brick. The wound suppurated, had to be dressed quite frequently, but at no time could a fracture be ascertained.

The patient was able to continue at work after a few days' absence from his accustomed activity. His wife is certain that ever since the accident he made mistakes in his official work, that he frequently failed to recognize old friends and was often rather confused and dull mentally. About a week before he came under observation, he had a stroke which caused a right-sided weakness and confusion of speech: he used the wrong words and appeared not to comprehend spoken or written speech. It appears that he improved rapidly for a few days and then became worse. There was a positive Babinski on the right side. Because of the conjugate deviation and the rather sudden onset, slow and full pulse and the age, the diagnosis of cerebral hemorrhage in the capsular region was made. The following day a more complete history was obtained. The patient had a slight rise of temperature (101°), and a polynuclear leucocytosis, and operation was advised in order to search for a possible deep-seated abscess. The operation revealed no abscess, and the patient died twenty-four hours later. Postmortem examination revealed a glioma situated deeply in the occipital and parietal lobes of the left side. An old hemorrhage cyst was seen, extending from its superior surface and continuous with it, also from its inferior border which broke into the lateral ventricle and thereby exerted pressure upon an old hemorrhage, and a rather recent hemorrhage of the left capsular area.

This case, like similar reported cases demonstrates several points: (1) a glioma may exist without causing symptoms; (2) cerebral hemorrhage may be the first symptom of glioma; (3) trauma of an insignificant kind may initiate serious disturbances in a quiescent brain tumor, eventuating in death; (4) mental disturbance, such as slight confusion and loss of memory may be the only symptom of deep-seated glioma; (5) glioma in which hemorrhage has occurred may simulate brain abscess; (6) diagnosis of existing brain tumor could not be made before the hemorrhage occurred because of the absence of general and local symptoms of brain tumor.

The microscopical examination reveals a typical glioma with multiple hemorrhages. In areas the cells are of medium size, closely set and show but little protoplasm. In other places the glia fibers seem to predominate. The most recent hemorrhage has extended into the left lateral and third ventricles and caused symptoms by pressure from within outward.

In conclusion this case corroborates the oft-noted observation that psychic disturbances may occur in brain tumor irrespective of its location. It will be seen that the entire prefrontal lobe is free from disease, and yet several weeks before the end there were decided psychic symptoms.

PATHOLOGY OF PSEUDOHYPERTROPHIC MUSCULAR DYSTROPHY.

By O. P. Johnstone, M.D.

The case is that of a boy between 15 and 20 years of age. Two other children in the family had previously died with typical symptoms of pseudohypertrophic muscular dystrophy. The clinical history of this case unfortunately is not available at the present time.

The splenius colli, erector spinæ, gastrocnemius and soleus muscles, and the 1st cervical, 5th cervical, 7th dorsal, and 3d lumbar segments of the cord have been examined. The erector spinæ showed the most marked changes of any of the muscles examined. Hardly a single recognizable muscle fiber remains in the sections studied, except those in the muscle spindles. A very few degenerated fibers are found, which, however, could not be recognized as muscle tissue, if the source of the section had not been known. The section is made up of a mass of fatty and connective tissue, the latter not very great in amount. Grossly the tissue appears to be a mass of adipose tissue with a few pinkish points here and there. Cellular infiltration is not much in evidence. Muscle spindles are numerous, several being found in practically all sections examined. A few muscle fibers within them are normal and show cross striations well. Fully as many have lost their cross striations, show longitudinal segementation, central nuclei, and moderate atrophic and hypertrophic changes. The atrophic and hypertrophic changes are not marked, however, the smallest fiber found measuring 10 micra in diameter, the largest 65 micra. Their cross section is round or oval. The nerves within the spindles show no apparent changes, with the hematoxylin and eosin stains.

The splenius colli was next in the extent of involvement, from two-thirds to three-fourths of the fibers having disappeared in some sections. In other sections nearly all the fibers have disappeared. The lost fibers have been replaced by fat, or the empty sarcolemma remains. Here most of the fibers remaining show good cross striation, but stain somewhat unevenly. Those which have lost the cross striation and show longitudinal segmentation are for the most part hypertrophied fibers. There is a most striking difference in the diameter of the individual fibers in this section, some measuring as little as 4 micra, while others lying close by measure from 100 to 200 micra in diameter. Most fibers measuring more than 100 to 125 micra show loss of cross striation, with granular degeneration, and longitudinal segmentation. These degenerative changes are found in but few fibers of normal or less than normal size. Many fibers show complete disappearance of the muscle substance, only the